Teaching Fundamental Marine Conservation Concepts in Grade School Classrooms

Genevieve Davis: genevieve.davis@noaa.gov
Phone: 508-495-2325
Sofie Van Parijs: sofie.vanparijs@noaa.gov
Grace Simpkins: abromait@gmail.com

Protected Species Branch
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543

Bioacoustics

- Kindergarten-2nd Grade
  - Blind find
    - Blindfolded student stands in circle and tries to identify speaker
  - Whose sound is it anyway?
    - After reviewing some marine mammals and their sounds, students try to identify animals by first their sound, then additional information, then picture

- 3rd-5th Grade
  - Blind find
  - Whose sound is it anyway?
    - Sound dichotomous key
  - Whale Morse Code
    - Students use buzzers to make their "calls" (Morse code sequence) to find their pod

Resources:
PSB Acoustics Sounds: www.nefsc.noaa.gov/psb/acoustics/sounds.html
Voices in the Sea: http://cetus.ucsd.edu/voicesinthesea_org/
Bridge: http://web.vims.edu/bridge

Marine Mammal Adaptations and Climate Change

- Kindergarten-2nd Grade
  - Structure and function
    - Students are given pictures of actual marine mammals and circle the adaptations they see
  - Make your own animal
  - Climate Change Videos
- 3rd-5th Grade
  - Structure and function
    - Students are given pictures of actual marine mammals and list the adaptations they observe as well as hypothesize their function
  - Dem Bones
    - Students construct and compare dolphin and human skeleton
  - Climate Change Videos

Resources:

- **Monterey Bay Aquarium**: http://www.montereybayaquarium.org/climate
- **Chesapeake Bay Ecosystem:** http://ecopath.org/LifeInTheChesapeakeBay
- **United Nations Environment Programme**: http://www.rona.unep.org/toomey
- **Climate Change Education:** http://climatechangeeducation.org
- **Environmental Protection Agency:** http://epa.gov
- **Port Townsend Marine Science Center, Orca Bone Atlas:** http://www.ptmsc.org/boneatlas/

Marine Mammals in Our Backyard

- Kindergarten-2nd Grade
  - Is it a mammal?
    - Students identify mammals
  - Is it a marine mammal?
    - Students circle marine mammals on their sheets
  - Is it a right whale?
    - Students match actual right whale pictures with drawings to ID the animals
- 3rd-5th Grade
  - Is it a right whale?
    - Students match actual right whale pictures with drawings to ID the animals
  - Is it the right whale?
    - Students are given picture cards and must identify the species they have using a dichotomous key.

Resources:

- **Google Earth**: http://www.google.com/earth
- **New England Aquarium:** http://www.neaq.org
- **Alaska Fisheries Science Center**: http://www.afsc.noaa.gov
- **Whale Times**: http://whaletimes.org
- **PSB Acoustics Species and Sounds**: http://www.nefsc.noaa.gov/psb/acoustics/sounds.html

Threats Facing Marine Mammals

- For All Grades
  - Rubber band entanglement
  - Marine debris net activity
  - Would you swim in this?
    - Students create their own mini-ocean to simulate what is found in the ocean these days

Resources:
- **Voices in the Sea:** http://cetus.ucsd.edu/voicesinthesea_org/
- **Kid Cyber**: http://kidcyber.com.au/

Food Web/ Ecology

- For All Grades
  - What do you eat?
    - Students must match their tooth/baleen to the proper animal and prey
  - Build a food web/overfishing activity
  - Food web/ ecosystem collage

Resources:
-**Food chain game**: http://www.sheppardsoftware.com/content/animals/kidscorner/games/foodchaingame.htm
- **Whale times:** http://whaletimes.org/
- **Bridge:** http://web.vims.edu/bridge

NOAA Outreach for Marine Mammal Education: tinyurl.com/psbNOEPS
Notes:

Feedback Page:

1. What do you think of the overall structure?

2. Are there any specific ideas/topics you would like to see covered by each of our topic strands?

3. Feedback on the lessons?

4. What additional resources would you like?

5. General comments?